**3GPP TSG-RAN WG4 Meeting #112 R4-2414411**

**Maastricht, Netherlands, August 19th – 23rd, 2024**

**Title:** WF on Delta PPowerClass and TRxSRS for 4Tx

**Agenda Item:** 5.9.1

**Source: Huawei, HiSilicon**

**Document for:** Approval

# <Topic 1: >

**<Way forward/Agreement>**: For PC1.5 UE without txDiversity4Tx-r18 capability

- Option 1: Limit the SRS transmit output power to:

* + 23dBm for t1rx AS capability by applying ΔPPowerClass = 6 dB
  + 26dBm for t2rx AS capability by applying ΔPPowerClass = 3 dB
  + 29dBm for t4rx AS capability by applying ΔPPowerClass = 0 dB
* For some cases the SRS power would be “unnecessarily” limited, e.g., t1rx AS capability, the UE equipped with 4 x 26dBm PAs, but this approach minimizes the uncertainty at the network side about which power was used by the UE.

- Option 2: Limit the SRS transmit output power to:

* + 26dBm for t1rx AS capability by applying ΔPPowerClass = 3 dB. Allow extra 3dB relaxation by using ΔTRxSRS.
  + 29dBm for t2rx AS capability by applying ΔPPowerClass = 0 dB. Allow extra 3dB relaxation by using ΔTRxSRS.
  + 29dBm for t4rx AS capability by applying ΔPPowerClass = 0 dB.
* For some cases the UE would be allowed by the specification to unnecessarily lower the power by 3dB even if it is not needed, e.g., t1rx AS capability, the UE sounds with the PA of 26dBm, it is allowed to relax it to 23dBm, even if not needed. The second problem is, even if the UE which wants to sound with the PA of 23dBm legally wants to relax the power to 23dBm by applying ΔPPowerClass = 3dB and ΔTRxSRS=3dB, the network cannot know it. ~~The network could know it if the behaviour were reported….~~, but this approach allows the UE to transmit higher power as much as possible if the UE uses the PA of 26 dBm as much as possible.

Note that other options are not precluded

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  + 26dBm for t2rx AS capability by applying ΔPPowerClass = 3 dB
  + 29dBm for t4rx AS capability by applying ΔPPowerClass = 0 dB